

**Remarks/Arguments:**

***Summary of Changes Made***

By this Amendment, claims 1, 2, 16-18, 20 and 34-37 have been amended, claims 13, 22-26, 31, 38 and 39 have been canceled, and new claims 40-49 have been added to the application. Thus, only claims 1-12, 14-21, 27-30, 32-37 and 40-49 remain pending in the application. No new matter has been added to the application.

***Claim Rejections - 35 U.S.C. §112***

In the prior Office Action, the Examiner rejected claims 22 and 39 under 35 U.S.C. §101 on grounds that such claims were indefinite inasmuch as they recited a use of a platinum alloy without specifying any active, positive steps delimiting how the use is practiced. By this Amendment, claims 22 and 39 have been canceled thereby rendering the prior rejection thereof moot.

***Claim Rejections - 35 USC §102***

In the prior Office Action, the Examiner rejected claims 23 and 26 under 35 U.S.C. §102(b) as being anticipated by Japanese patent 404087260 (hereinafter "JP'260"), Kretchmer, U.S. Pat. No. 6,869,567, or Japanese patent 359143032 (hereinafter "JP'032"). By this Amendment, claims 23 and 26 have been canceled thereby rendering the prior rejection thereof moot.

***Claim Rejections - 35 USC §103***

Also in the prior Office Action, the Examiner rejected claims 1-8, 11-21, 24, 25, 27, 28 and 31-39 under 35 U.S.C. §103(a) as being unpatentable over the English abstract of JP'260. The INPADOC database indicates that JP'260 was also published as Itoh et al., U.S. Pat. No. 5,178,971 (hereinafter "US'971"). Inasmuch as US'971 is written in the English language, reference herein will be made to US'971 rather than JP'260.

The Examiner contends that US'971 discloses a platinum alloy containing cobalt and copper in wt.% ranges (when converted from atomic %) that overlap those recited

by the claims, and that such overlap establishes a prima facie case of obviousness. Inasmuch as claims 13, 24, 25, 31, 38 and 39 have been canceled, the rejection thereof is now moot. However, in view of the amendments made to the claims by this Amendment, applicant respectfully requests reconsideration of the rejection of claims 1-8, 11, 12, 14-21, 27, 28 and 32-37.

US'971 discloses an electrocatalyst powder material that comprises an electrically conductive powder carrier material (e.g., carbon black) in an on which is dispersed and deposited a platinum-cobalt-nickel-copper quaternary solid solution alloy. US'971 teaches that the electrocatalyst powder material can be used to form an oxygen reduction cathode for a phosphoric acid fuel cell by mixing the powder with a water-repellent binder and adhering the mixture to a graphite paper support. US'971 is clearly not directed to the production of a platinum alloy that is suitable for use in the production of ornamental articles such as rings, necklaces, earrings, watch bands, watch bodies and other jewelry as in the present application. On the contrary, US'971 is directed to an electrocatalyst powder material that can be used in fuel cell applications.

Claim 1, as amended, specifies that the Vickers hardness of the platinum alloy, measured at soft state, is between about 130 to 210 HV10 (claim 1 was amended to incorporate the limitations previously set forth in dependent claim 13, which has been canceled). Applicant respectfully submits that the electrocatalyst powder material disclosed and taught in US'971 would not meet this limitation. Due to its carbon black content, the electrocatalyst powder material described in US'971 would exhibit a considerably lower Vickers hardness than the about 130 HV10 limit specified in the amended claims. Furthermore, in view of the manner in which the platinum-cobalt-nickel-copper quaternary solid solution alloy component of the electrocatalyst powder material described in US'971 is formed (i.e., by impregnation of carbon black with aqueous solutions of metal ions), it would not be possible to obtain a Vickers hardness testable bulk amount of the platinum-cobalt-nickel-copper quaternary solid solution alloy component that was exclusive of the carbon black component. Reconsideration of the rejection of claim 1 is thus respectfully requested.

Claims 3, 4, 7 and 8 depend from claim 1 and thus include the Vickers hardness limitation of claim 1, which makes such claims patentable over US'971 for the same reasons that claim 1 is patentable over US'971. Claims 12, 14 and 15 also depend from claim 1, and in addition to being patentable over US'971 for the reasons claim 1 is patentable over US'971, such claims further specify mechanical properties (in the case of claims 12 and 14) or optical properties (in the case of claim 15) that are clearly not present in the electrocatalyst powder material according to US'971.

Claim 2, as amended, specifies that the platinum alloy consists essentially of 70 to 79.5 wt.% of platinum, 2 to 10 wt.% of cobalt, and 10.5 to 28 wt.% of copper, and that the Vickers hardness of the alloy, measured at soft state, is between about 130 to 210 HV10. As noted above, the platinum-cobalt-nickel-copper quaternary solid solution alloy component of the electrocatalyst powder material described in US'971 is a quaternary solid solution alloy that includes nickel, and thus it does not consist essentially of the three elements, namely platinum, cobalt and copper, as claimed in claim 2.

Claims 5, 6, 27 and 28 depend from claim 2 and thus include the "consisting essentially of" limitation of claim 2, which makes such claims patentable over US'971 for the same reasons that claim 2 is patentable over US'971. Claims 32 and 33 also depend from claim 2, and in addition to being patentable over US'971 for the reasons claim 2 is patentable over US'971, such claims further specify mechanical properties (in the case of claim 32) or optical properties (in the case of claim 33) that are clearly not present in the electrocatalyst powder material according to US'971.

Claim 11 depends from claim 1, and further specifies that the platinum alloy consists essentially of 57.5 to 59.9 wt.% of platinum, 3.5 to 4.5 wt.% of cobalt, and 35.6 to 39 wt.% of copper, wherein 0.001 to 2 wt.% of copper may be substituted by at least one first metal selected from the group consisting of palladium, iridium and ruthenium and 0.001 to 2 wt.% of copper may be substituted by at least one second metal selected from the group consisting of indium and gallium, and that the Vickers hardness of the alloy, measured at soft state, is between about 130 to 210 HV10. As noted above, the platinum-cobalt-nickel-copper quaternary solid solution alloy component of the

electrocatalyst powder material described in US'971 is a quaternary solid solution alloy that includes nickel, and thus it does not meet the limitations as claimed in claim 11.

Claim 16, as amended, claims a method of preparing a platinum alloy, comprising the steps of: providing alloy components, said alloy components comprising: 55 to 63 wt.% of platinum, 2 to 10 wt.% of cobalt, and 27 to 43 wt.% of copper; blending the alloy components together; and melting the alloy components to form said alloy, wherein a Vickers hardness of said alloy, measured at soft state, is between about 130 to 210 HV10. As noted with respect to claim 1, the electrocatalyst material disclosed in US'971 would not meet the Vickers hardness limitations specified in claim 16, and thus claim 16 is patentable over US'971.

Claim 17, as amended, claims a platinum-colored material for ornamental purposes comprising a platinum alloy, said alloy comprising: 55 to 63 wt.% of platinum, 2 to 10 wt.% of cobalt, and 27 to 43 wt.% of copper, wherein a Vickers hardness of said alloy, measured at soft state, is between about 130 to 210 HV10. As noted with respect to claim 1, the electrocatalyst material disclosed in US'971 would not meet the Vickers hardness limitations specified in claim 17, and thus claim 17 is patentable over US'971.

Claim 18, as amended, claims an ornamental article comprising a platinum alloy, said alloy comprising: 55 to 63 wt.% of platinum, 2 to 10 wt.% of cobalt, and 27 to 43 wt.% of copper, wherein a Vickers hardness of said alloy, measured at soft state, is between about 130 to 210 HV10. As noted with respect to claim 1, the electrocatalyst material disclosed in US'971 would not meet the Vickers hardness limitations specified in claim 18, and thus claim 18 is patentable over US'971.

Claim 19 depends from claim 18 and further specifies that the ornamental article is selected from the group consisting of a ring, a necklace, an earring, a watch band, and a watch body. US'971 relates to the production of an electrocatalyst powder material, and not to a material that can be manufactured into an ornamental article as claimed in claim 19. Claim 19 is thus clearly patentable over US'971.

Claim 20, as amended, claims a method of fabricating the ornamental article, comprising the steps of: providing alloy components, said alloy components comprising: 55 to 63 wt.% of platinum, 2 to 10 wt.% of cobalt, and 27 to 43 wt.% of copper; blending

the alloy components together; and, melting the alloy components to form said alloy, wherein a Vickers hardness of said alloy, measured at soft state, is between about 130 to 210 HV10. US'971 relates to the production of an electrocatalyst powder material, and not to a material that can be manufactured into an ornamental article as claimed in claim 20. Claim 20 is thus clearly patentable over US'971.

Claim 21 depends from claim 20 and further specifies that the ornamental article is fabricated by casting the melted alloy into a shape of the ornamental article. US'971 relates to the production of an electrocatalyst powder material, and not to a material that can be cast into a shape of an ornamental article. Claim 21 is thus clearly patentable over US'971.

Claims 34-37, as amended, claim a method of preparing a platinum alloy, a platinum-colored material for ornamental purposes comprising a platinum alloy, an ornamental article comprising a platinum alloy, and a method of fabricating an ornamental article from a platinum alloy, respectively, wherein the platinum alloy consists essentially of specified amounts of platinum, cobalt and copper, and wherein the Vickers hardness of the platinum alloy, measured at soft state, is between about 130 to 210 HV10. As noted above, the platinum-cobalt-nickel-copper quaternary solid solution alloy component of the electrocatalyst powder material described in US'971 is a quaternary solid solution alloy that includes nickel, and thus it does not consist essentially of the three elements, namely platinum, cobalt and copper, as claimed in claims 34-37. Reconsideration of the rejection thereof is respectfully requested.

Also in the prior Office Action, the Examiner rejected claims 9, 10, 29 and 30 under 35 U.S.C. §103(a) as being unpatentable over JP'260 (US'971) as applied to claims 1-8, 11-21, 24, 25, 27, 28 and 31-39 further in view of Japanese patent 356029641 ("JP'641"). The Examiner contends that JP'260 (US'971) closely meets the composition recited by claims 9, 10, 20 and 30, except that it fails to include small amounts of rare earth elements such as Pd, Ir, Ru, In and/or Ga. The Examiner contends, however, that it would have been obvious to modify the teachings of JP'260 (US'971) to include these elements because JP'641 teaches that such elements can be included in a platinum alloy to enhance strength and hardness. For the reasons set

forth below, applicant respectfully disagrees with the Examiner's rejection of claims 9, 10, 29 and 30, and requests reconsideration.

Unlike JP'260 (US'971), which is directed to an electrocatalyst powder material, JP'641 is directed to a platinum alloy for use in preparing ornamental objects such as jewelry. Applicant has submitted an English language translation of JP'641 contemporaneous with this Amendment to aid in the discussion of the reference teachings.

Contrary to the Examiner's contentions, one skilled in the art would not be motivated to modify the electrocatalyst powder material of JP'260 (US'971) in view of the teachings JP'641 to arrive at applicant's platinum alloy as claimed. First of all, there would be no motivation to attempt to enhance the strength and hardness of the platinum-cobalt-nickel-copper quaternary solid solution alloy component of the electrocatalyst powder material according to JP'260 (US'971) because such material is not used in an application where strength or hardness is of concern. The electrocatalyst powder material disclosed in JP'260 (US'971) is used to form cathodes for fuel cells. Mechanical properties are of no concern, particularly since the material is in the form of a powder that is bonded to graphite paper support. Furthermore, the addition of rare earth elements to the composition according to JP'260 (US'971) would necessarily interfere with and prevent the formation of the desired platinum-cobalt-nickel-copper quaternary solid solution alloy, which is an integral component of the electrocatalyst powder material of JP'260 (US'971). One of skill would not be motivated by the teachings of JP'641 to modify the electrocatalyst powder material according to JP'260 (US'971) to read on applicant's invention as set forth in claims 9, 10, 29 and 30. The rejection should therefore be withdrawn.

Also in the prior Office Action, the Examiner rejected claims 2, 5, 6, 24, 25, and 27-39 under 35 U.S.C. §103(a) as being unpatentable over JP'641 or JP'032 (an English language translation of JP'032 has been submitted contemporaneous with this Amendment). Claims 24, 25, 31, 38 and 39 have been canceled thereby rendering the prior rejection thereof moot. In view of the amendments made to the claims herein, applicant respectfully requests reconsideration of the remaining rejected claims.

As noted above, JP'641 is directed to a platinum alloy for use in preparing ornamental objects such as jewelry. The platinum alloy according to JP'641 specifies a platinum content of 80 to 95 wt.%. Moreover, the platinum alloy of JP '641 specifies, as a mandatory component, 0.01 to 5 wt.% of misch metal. "Misch metal" is a commercially available pyrophoric alloy that is made of cerium and a mixture of several rare earth metals.

Claim 2, as amended, specifies that the platinum alloy consists essentially of 70 to 79.5 wt.% of platinum, 2 to 10 wt.% of cobalt, and 10.5 to 28 wt.% of copper, and that the Vickers hardness of the alloy, measured at soft state, is between about 130 to 210 HV10. Thus, the platinum alloy according to JP'641 includes more platinum (80 to 95 wt.%) than is permitted by claim 2 (up to 79.5 wt.%), and further includes components (e.g., misch metal) that may not be present in the platinum alloy as claimed in claim 2. There is no teaching or suggestion in JP'641 that would motivate one of skill in the art to remove the misch metal and decrease the platinum content of the alloy, and thus claim 2 is thus patentable over JP'641.

Claims 5, 6, 27, 28-30 and 32-37 all include the same "consisting essentially of" limitation, and the limitation prohibiting the platinum content from exceeding 79.5 wt.%. Clearly, such claims are not obvious in view of JP'641, which teaches a platinum alloy that includes a greater amount by weight of platinum (80 to 95 wt.%) than claimed, and also the presence of Misch metal, which is not permitted by applicant's claims.

Reconsideration of the rejections in view of JP'641 is respectfully requested.

The Examiner cites JP'032 with reference to claims 29, 30, 36 and 37. As noted above, each of these claims includes a "consisting essentially of" limitation with respect to platinum, cobalt and copper (and palladium, iridium and ruthenium in the case of claim 29, and indium and gallium in the case of claim 30). JP'032 discloses a surface-hardenable platinum alloy material containing 0.5 to 15 wt.% of chromium as a mandatory component. The presence of chromium is necessary in the alloy according to JP'032 in order to form chromium boride during boronation treatment of the material. The required presence of at least 0.5 wt.% of chromium in the alloy according to JP'032 makes claims 29, 30, 36 and 37 patentable over such reference.

***New Claims***

By this Amendment, applicant has added new claims 40-49 to the application to round out applicant's claim coverage. New claim 40 claims a platinum alloy comprising: 70 to 79.5 wt.% of platinum, 2 to 10 wt.% of cobalt, and 10.5 to 28 wt.% of copper, wherein a Vickers hardness of said alloy, measured at soft state, is between about 130 to 210 HV10, and wherein said alloy is essentially free of chromium. New claims 41-44 are drawn to a method of preparing a platinum alloy, a platinum-colored material for ornamental purposes comprising a platinum alloy, an ornamental article comprising a platinum alloy, and a method of fabricating an ornamental article by forming a platinum alloy, respectively, that comprises 70 to 79.5 wt.% of platinum, 2 to 10 wt.% of cobalt, and 10.5 to 28 wt.% of copper, has a Vickers hardness, measured at soft state, that is between about 130 to 210 HV10, and is essentially free of chromium.

New claim 45 claims a platinum alloy comprising: 74 to 76 wt.% of platinum, 3.5 to 8 wt.% of cobalt, and 16 to 22.5 wt.% of copper, wherein the alloy has a Vickers hardness, measured at soft state, between about 130 to 210 HV10. New claims 46-49 are drawn to a method of preparing a platinum alloy, a platinum-colored material for ornamental purposes comprising a platinum alloy, an ornamental article comprising a platinum alloy, and a method of fabricating an ornamental article by forming a platinum alloy, respectively, that comprises 74 to 76 wt.% of platinum, 3.5 to 8 wt.% of cobalt, and 16 to 22.5 wt.% of copper, wherein the alloy has a Vickers hardness, measured at soft state, between about 130 to 210 HV10.

***Information Disclosure Statement***

It appears that the Information Disclosure Statement filed on July 25, 2005 was not considered by the Examiner in the prior Office Action. The Information Disclosure Statement may not have been received when the Office action was prepared. Applicant hereby requests that the Examiner consider the references submitted in the Information Disclosure Statement filed July 25, 2005, as well as the English language translations of the foreign language references cited by the Examiner in the prior Office Action.

***Conclusion***

In light of the foregoing, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in a condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

Respectfully submitted,

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